

Chapter XIII

Stakeholder Management

Always treat your employees exactly as you want them to treat your customers.

(Steven Covoy)

The identification and management of a project's stakeholders is vital to the complete success of a project. Well-planned and properly-executed projects often can still fail due to a lack of or inappropriate relationships between the project manager and various stakeholders. This chapter discusses matters related to the human side of project management, including stakeholder relations, communications, and project team management.

Stakeholder Identification and Analysis

The first step in good stakeholder management is the complete identification of all of the stakeholders. Cleland (1998) defines stakeholders as follows:

Stakeholders are people or groups that have, or believe they have, legitimate claims against the substantive aspects of the project. A stake is an interest or share or claim in a project; it can range from informal interest in the undertaking, at one extreme, to a legal claim of ownership at the other extreme.

Stakeholders are associated with both the performing organization and the benefiting organization; these are called internal stakeholders. The performing and benefiting organizations may or may not be part of the same company, and there may be a formal

or informal contract situation. In addition, there are usually “external” stakeholders that are not part of these two groups. Traditionally, the key stakeholders have been individuals or other groups closely associated with either the benefiting or performing organizations. “However, long-run changes in the social, political, and economic environment of projects have meant that this is no longer necessarily the case for a number of reasons” (Winch, 2004). Today there may also be a number of key external stakeholders in terms of various social, political, or economic interests.

Internal stakeholders related to the *benefiting organization* might include:

- Project sponsor(s)
- Business owners or stockholders
- Customer line management
- Customer’s users of the IT system
- Customer’s IT group
- Customer’s accounting group
- Customer’s business units affected
- Customer’s other employees
- Customer’s customers
- Customer’s contractors and vendors
- Customer’s financiers

Internal stakeholders related to the *performing organization* might include:

- Project manager
- Business owners or stockholders
- Project team
- Performing organization’s line management
- Performing organization’s IT group
- Performing organization’s accounting group
- Performing organization’s other employees
- Performing organization’s customers
- Performing organization’s contractors and vendors
- Performing organization’s financiers

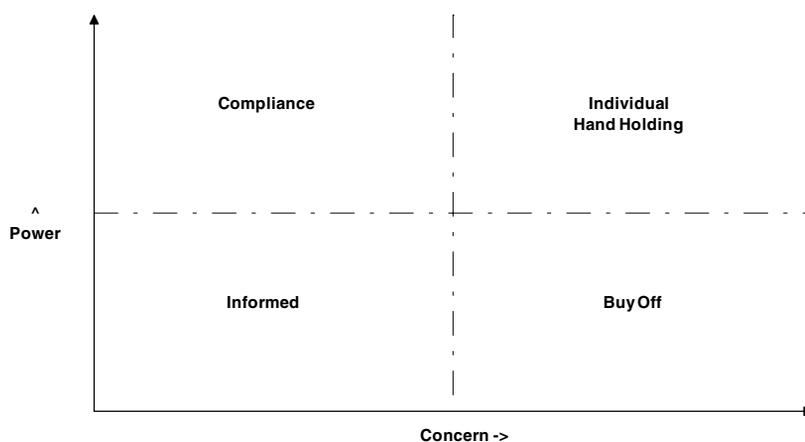
External stakeholders may be concerned individuals, companies, or associations that can be termed *private* interests; they may be local, state, federal, or international government bodies that can be termed *public* interests (Winch, 2004). External private stakeholders

might include concerned individuals, trade associations, environmental and conservationists associations, neighborhood association, and the like. External public stakeholders might include local governments, state governments, federal regulatory agencies, federal governments, or international agencies.

Once the stakeholders have been identified, then each must be analyzed carefully in order to determine the manner in which that stakeholder should be managed. Stakeholders that are more concerned about a project will have to be managed differently than those that are less concerned; similarly, stakeholders that are more powerful will have to be managed differently than those that are less powerful. Each stakeholder or group of stakeholders may have a different type of stake in the project including monetary, job security, position, influence, reputation, or convenience (time). The interests of all stakeholders in one group may not be the same, if the result of the successful completion of the project may alter the “balance of power” in that organization. For example, within the benefiting organization different stakeholders may be for, against, or neutral about the project and this may depend upon the way the final project manifests itself or the way it is implement in the benefiting organization. IT ERP projects, which involve a number of corporate business units, there is very much corporate change including work flow, policies and procedures, management structure, and so forth; for this reason different stakeholders within the same group (i.e., the benefiting organization) may have varying interest in the success of such a large project.

Figure 13.1 shows a power vs. concern graph that can be used to visually assign stakeholders into one of these four categories. Powerful and highly concerned stakeholders will have to have to be actively managed throughout the project; these are the people who will need their hands held. For each of these individuals or groups the project manager must ascertain:

Figure 13.1. Stakeholder classification



- What is the biggest thing this stakeholder has to gain if the project succeeds (fails)?
- What is the biggest thing this stakeholder has to lose if the project fails (succeeds)?

Next the project manager (or line management) must try to best align this person with the project and get early buy-in; and then check on this alignment during all phases of the project. Stakeholders that are powerful but not too concerned, usually have some standards or other manifestation of principle that they wish to be followed. An example here is regulatory agencies. This group of stakeholders is best managed by becoming very knowledgeable and clear on the principles and standards involved and then complying with same. Stakeholders that are not powerful but quite concerned need to be aligned with the project; this is the so-called buy-off group. This done first by finding out why they are so concerned, and then seeing if they can be aligned with the project initially; they do not need constant attention as does the powerful and very concerned group. Stakeholders that are not powerful and not too concerned simply need to be kept informed on a regular basis as a group.

In terms of power and influence over project affairs, there are four types of power in most organizations and communities of stakeholders:

- Power due to position (or rank)
- Power due to control over resources (like budget)
- Power due to unique expertise
- Power due to politics and/or charisma

Some authors define other types of power like physical power, which may have relevance on a sport team, but typically not in a project management environment. Other types of power defined by some are position subtypes of power as:

- *Reward*: Power based on being able to give an employee something he wants; does not necessarily mean money, may be a position/role on the team, or may be a positive evaluation supplied by the PM to a functional line manager
- *Referent*: Power bestowed from a higher point in the organization
- *Penalty*: Power based on being able to penalize someone (may be more than monetary)

A stakeholder may fall into more than one of these categories. Figure 13.2 shows one method to perform this stakeholder analysis including an analysis of power vs. concern and type of power. In this spreadsheet each stakeholder is listed and characterized by checking off columns.

After all the stakeholders have been identified and analyzed, a stakeholder action plan should be developed. This plan will explain how each stakeholder is to be managed and who (within the project team, line management, or project management office

Figure 13.2. Stakeholder analysis

Stakeholder Analysis															
Stakeholder	Internal		External		Stand			Power		Concern		Influence			
	Benefitor	Performer	Private	Public	For	Against	Neutral	High	Low	High	Low	Position	Resource	Political	Expert

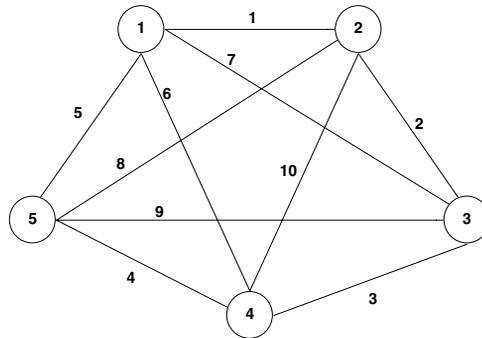
[Chapter XVI] is responsible for carrying out each item in the action plan for that stakeholder. This stakeholder management plan can be a separate plan or be part of the communications plan, discussed later in this chapter. As part of the stakeholder management plan, potential claims by a stakeholder or other potential unfavorable actions should also be identified and included in the project risk management plan covered earlier in this book. As well as correlating with the communications plan and risk management plan, the stakeholder management plan should also map to the quality plan.

PMI’s PMBOK does not specifically address the larger issue of general stakeholder management, but defines two knowledge areas directly concerned with stakeholder management: *communications management* and *human resource management*. Risk management has already been addressed in this book, and as stated earlier, stakeholder risk tolerances are a factor in determining an overall risk management plan.

Communication Management

Communications management involves managing the process of information flow to and from stakeholders. As discussed previously, there are many different stakeholders, each with differing roles, interests, priorities, and agendas. In addition there are many types of information some of which needs to go between different stakeholders at different times and frequencies, possibly using different mechanisms. *The project manager’s role is not to try to control all these differing flows, but to influence project communications to the benefit of the project.* Remember that it is the role of the project team members to do their assigned duties and complete their assigned tasks; and it is the role of general management to define the project, support the project, and protect it from disruptive or unnecessary changes; however, the prime role of the PM is as the integrator and communicator for all project stakeholders. Thus the project manager serves as the focal point for project communication. The PM should try to influence communications to the extent that communications are following plan, but the PM cannot physically control communication. If there are N people involved, there will be $N*(N-1)/2$ possible communication channels; this is illustrated in Figure 13.3 for five people.

Figure 13.3. Communication channels



The PMI communication management processes are (PMI, 2000):

- Communications planning
- Information distribution
- Performance reporting (covered in Chapter XIV)
- Administrative closure (covered in Chapter XI)

Poor communication is a major cause of project problems and project team members may lose motivation or be caught up in rumors due to poor communication. Stakeholders also may become discouraged or angry with lack of proper communication. A typical project manager spends 90% of his or her time communicating (PMI, 2000). This includes:

- About 2 hours/day in meetings
- Over 1 hour per day in one-on-one coaching or discussion
- Much of the balance in reporting, both oral and written

Thus, PMs must be skilled in both oral and written communications. PMs communicate regularly with:

- Upper line management
- The project sponsor
- The project team
- Other PMs and related project teams
- Customers
- Other stakeholders

The direct purpose of all the PM communication is to keep all the stakeholders informed to the degree necessary as specified in the stakeholder analysis. However, the indirect purpose is to “take the pulse” of the stakeholders in regard to their opinion and concern over project direction, progress, risks, and other issues. This is illustrated in Figure 13.4.

In general, communications involves sending a message between a sender and a receiver over a particular medium in a mode with certain parameters (such as frequency). This is illustrated in Figure 13.5. Proper communications involves choosing the correct media, mode, and parameters for a given message to a given receiver.

The sender is responsible for making the message clear, unambiguous, and complete. The receiver is responsible for making sure that the message is received in its entirety, and that the message is completely understood. The message is encoded by the sender and decoded by the receiver. The encoding/decoding is done by each party based on their:

- Language (and dialect)
- Culture
- Units of measure (currency, size, weight, volume, time, etc.)
- Discipline
- Education and industry area
- Experience

Figure 13.4. PM and stakeholder communications

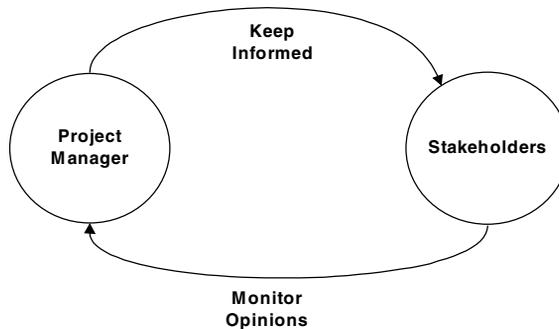
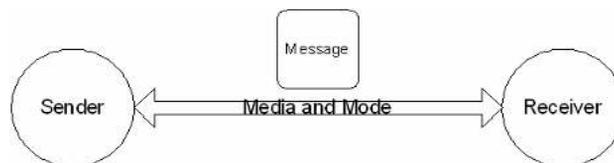


Figure 13.5. Communications



If there is significant mismatch between the sender and receiver in any of these areas then the message may not be fully understood. Earlier in this book we discussed the formal project management discipline and the formal software engineering discipline. However, much of project communication to stakeholders will involve individuals who are not familiar with formal project management or software engineering terms or acronyms. Terms like *critical path* should be replaced with phrases like *high-priority tasks*. Other common project management terms to rephrase to stakeholders may include *Gantt chart*, *earned value variances and indexes*, *dependency*, *slack*, *float*, *WBS*, etc.

The media (channel) may be:

- Spoken (voice/personal, phone, voice-mail, video conferencing)—one-on-one or group
- Written (paper, e-mail, fax, shared media)

and the mode may be:

- Listening or speaking
- Formal or informal
- Internal or external
- Vertical or peer-to-peer

Various types of written reports that are distributed also make up a significant portion of project communication; these would include:

- Status reports (see a later chapter for performance reporting)
- Assignments and direction
- General correspondence
- Topic specific memos
- Meeting notes
- Technical (designs, specifications, drawings, charts, test results, etc.)

Today many of these are transmitted via e-mail. However, spoken communication is still heavily relied upon for many stakeholders in many projects. A significant portion (about one half) of all spoken communication is effected via nonverbal modes such as physical mannerisms (body and face language) and paralingual (tone and pitch of one's voice). Effective listening involves watching the speaker for these nonverbal messages and using active listening and feedback. In active listening, the receiver confirms that he has received the message and asks a question to confirm that he understood the entire

message. Feedback means that the sender requests acknowledgment from the receiver to confirm that he or she has indeed understood the entire message. *These communication techniques are very important when there is significant sender/receiver mismatch. For modern IT projects, there can be significant mismatch for global projects and/or for where any outsourcing is involved particularly, offshore outsourcing.*

Sender/receiver mismatch is one form of communication obstacles, and a list of such obstacles includes:

- Sender/receiver mismatch
- Distance (in space or time)
- Noise (channel is not clear or “cluttered”)
- Hostility and other detrimental attitudes
- Lack of openness to hear ideas of others

A key task of the PM in is to work with his team and other stakeholders to specifically remove any such obstacles or to mitigate the impact of their presence. In this regard, the PM should:

- Avoid the aforementioned communication blockers/obstacles
- Have a proactive communications style
- Be a communications expeditor
- Make sure communications is following plan (discussed later in this chapter)
- Insure communications integrity through active listening and feedback
- Use a project war room (either physically or virtually)
- Make meetings effective (discussed later in this chapter)

For all communication, both written and spoken, a PM should keep documentation thereof. The PM has several reasons to maintain such *project documentation*, including the need to be able to reconstruct why certain decisions were made (including who said what)—“CYA”—and for historical value (lessons learned, settling disputes, etc.).

A communications plan involves determining the information reporting needs and other communication needs of stakeholders—*who, what, how, and when*:

- *Who* needs *what* type of information
 - Content
 - Format
- *How* is the information to be distribution
- *When*

Frequency (weekly, monthly, etc.)

Timing (specific day of week, or day of month)

The project communication plan should be formal written proactive plan that details the aforementioned aspects; that plan is used with or combined with the stakeholder analysis described at the start of this chapter. The communication plan should also cover

- Meetings (regular/special, when/where, how, notes, note-taker, etc.)
- Communication channels including phone numbers, e-mail addresses, and perhaps physical offices addresses (for all team members and stakeholders)
- Organizational structures and reporting relations
- Problem escalation procedures

Meetings represent a significant expense to a project, since the time of many expensive people are being consumed on indirect work activities. However some meetings are necessary to a project for team building, group decisions and group consensus, problem solving, and conflict resolution. In a PMI survey of PMs (PMI, 2000):

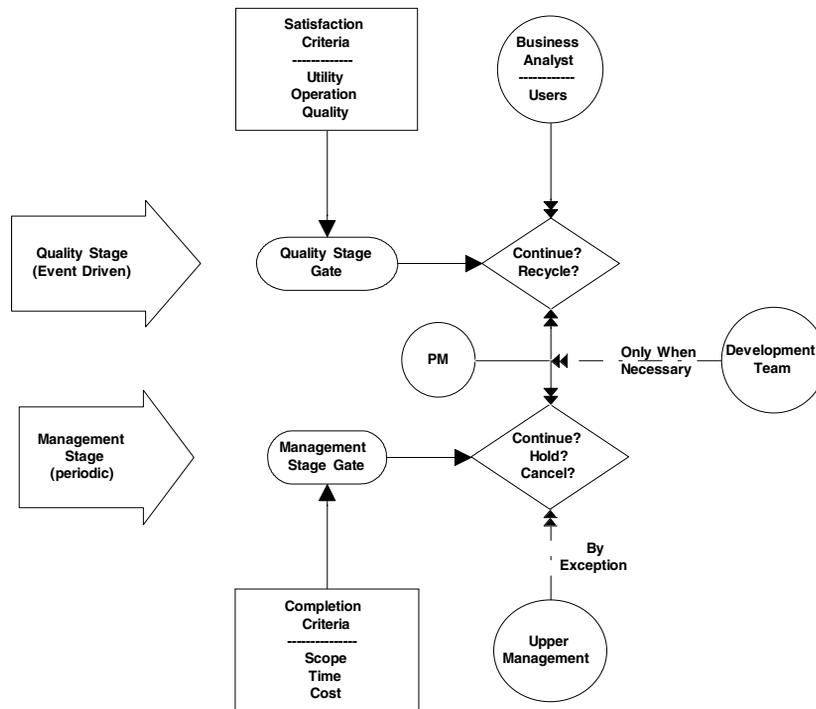
- Average meetings were six per week
- An average of 25% of meeting time was on nonproductive issues
- Causes of meeting time wastage: meeting not properly planned, inept leadership, undisciplined participants

A PM may have many different types of meetings with the project team or with other stakeholders; however, many PMs still try to manage via meetings, and many meetings are neither efficient nor an effective use of people's time. When meetings are used, only the people who need to be at a meeting should attend and only the necessary topics should be covered. Many project issues and much project communication (such as status) can be reported without having meetings. In this book, a dual gating process for project performance monitoring has been suggested. This approach not only provides for the exposure and analysis of both project completion and satisfaction success criteria, but minimizes the time of key individuals in meetings. This is illustrated in Figure 13.6, where upper management and the development team are relatively isolated from regular meetings.

A set of meeting guidelines such as the following should be included in the project communication plan:

- Set a meeting policy for regular and ad hoc meetings
- Have a meeting only when they are really necessary and consistent with the meeting policy

Figure 13.6. Dual stage gates and stakeholder involvement



- Cancel any regularly scheduled meeting when there is little to discuss
- Establish a clear meeting purpose and prepare an agenda
- Check with team and possible other stakeholders on items for the agenda
- Carefully select participants; include everyone that should be there but be careful about inviting others
- Send participants a copy of the agenda in advance
- Prioritize agenda items in case of time overflow
- Follow agenda, encourage participation but control the flow of the meeting, include a team-building segment
- Take and file meeting notes
- Promptly distribute notes
- Identify and follow up on action items

There is software available to aid in the scheduling of meetings, including the display of all the participant's schedules to find open time/place slots. Today meetings may be

virtual instead of physical, and there is much software available to facilitate virtual meetings both the synchronous and the asynchronous types.

Project communication may be spoken or written (paper or electronic), and it may be formal or informal. Generally, one of these four combinations is most appropriate for certain situations, and this may simply be part of an organization’s culture or it may be made a formal part of the project communication plan.

Figure 13.7 is an example of such a formalization.

Also the communication may involve stakeholders at the same place or different places and the communication may be at the same time (synchronous) or at different times (asynchronous). This is illustrated in Figure 13.8.

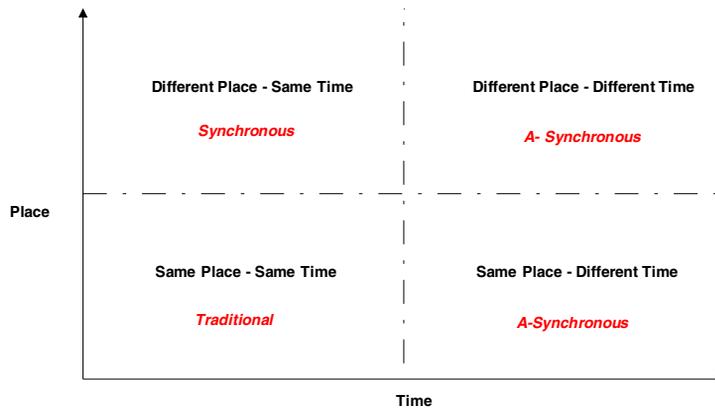
Typical modern communication modes and media for each of these four cases would be

- *Same Place—Same Time:* Traditional meetings and in-person conversations
- *Different Place—Same Time:* Synchronous modes such as conference calls, video conference, instant messaging, groupware, and chat rooms

Figure 13.7. Appropriate type of communications

Method	When Appropriate
Formal Written	Project charter, project plans, performance reports, communications where “obstacles” are involved, discussions of complex problems
Formal Verbal	Project kick-off meeting, presentations, speeches
Informal Written	Memos and e-mail
Informal Verbal	Conversations and meetings

Figure 13.8. Place and time of communications



- *Same Place—Different Time:* Asynchronous local modes as rotating files, Post-it notes, e-mail, online forums
- *Different Place—Different Time:* Asynchronous distance modes as e-mail and online forums

The project communications plan should also specify the details for these four cases. There are a number of software tools available to facilitate most of these communication tasks, places and times. These include:

- Office productivity suites (word processing, spreadsheet, and presentation software)
- Project management software (discussed later in this book)
- E-mail and instant messaging
- Internet and Intranet
- Virtual meetings, chat, forums, blogs, bulletin boards
- Groupware
- Imaging systems
- Design distribution and exchange (UML, CAD, etc.)
- Document routing and management systems
- Report generation software
- Standard formatting and info exchange software (XML, HTML, VRML, etc.)

Another aspect of the formal communications plan is definitive procedures for problem escalation. Without such defined procedures, the PM may be questioned in regard to the timeliness of bringing certain types of information to the attention of higher management. Those escalation procedures specify how much time each organizational component (project team member, project manager, line manager, etc.) should wait trying to contact someone else for problem solution and how much time to wait without resolution before escalating a problem to the next level.

Organizational Context

In examining stakeholder management for internal stakeholders, the organizational context of project management needs to be discussed; that is, how does a PM fit into the organization's overall management structure. The manner in which a PM manages and controls his or her project depends somewhat on this overall organization structure. In regard to the management of projects, there are several types and subtypes of organizational structures:

Figure 13.9. Problem escalation plan

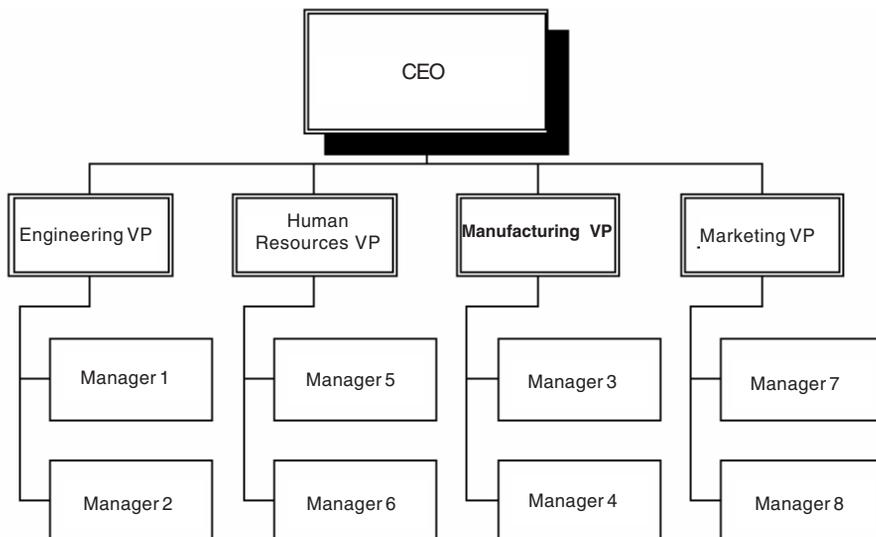
Type of Problem	Project Team Member		Project Manager	
	Wait Time	Escalation Time	Wait Time	Escalation Time
...

- Functional
- “Project expeditor”
- “Project coordinator”
- Projectized
- Matrix
- Weak
- Strong
- Balanced

The functional organization is the traditional structure and the most common way to organize a company. Advantages of this structure are that their organization is well understood and has a rigid chain of command, each employee reports to only one manager, and it is easier to manage specialists. Figure 13.10 depicts this traditional functional organization.

The disadvantages of this traditional organization in regard to project management are that employees place more emphasis on their functional specialty than on the project and

Figure 13.10. Traditional functional organization



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there is no explicit career path in project management. Here the PM role is weak (particularly if the project team is not all in one division/department), and the PM has to go to the functional manager to make and enforce decisions.

In functional organizations, sometimes there is a project expediter who typically reports to a functional manager (as a staff assistant) in the division/department that sponsors or is primarily affected by the project. This expediter has little power and typically only maintains the project schedule, status, and budget/costs; he or she cannot personally make or enforce decisions, and his or her main role is in the area of communications. Figure 13.11 illustrates the expediter role.

Instead of a project expediter, a functional organization sometimes uses project coordinators. The coordinator typically reports to someone high up in the organization, perhaps even to the CEO or in IT the CIO. Here the PM has more power than the project expediter, including some power to make limited decisions (limited by scope, impact, costs, etc.). Figure 13.12 depicts this project coordinator.

At the opposite end of the extreme is the projectized organization. Here the project manager has full authority over project personnel. Advantages are that a PM has full control and it is efficient for project execution, employees have loyalty to the project, and project communication is direct and efficient. Disadvantages are that of a weak functional structure (may have lack of professionalism in disciplines), employees have no home when project is completed, and there may be a less efficient use of resources. Projectized

Figure 13.11. Project expediter

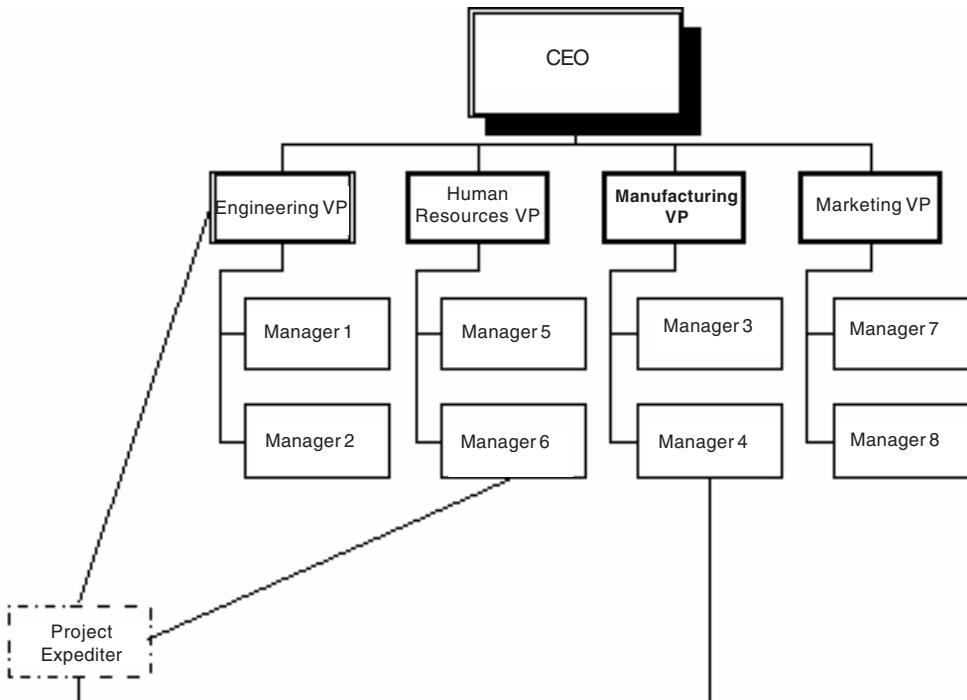
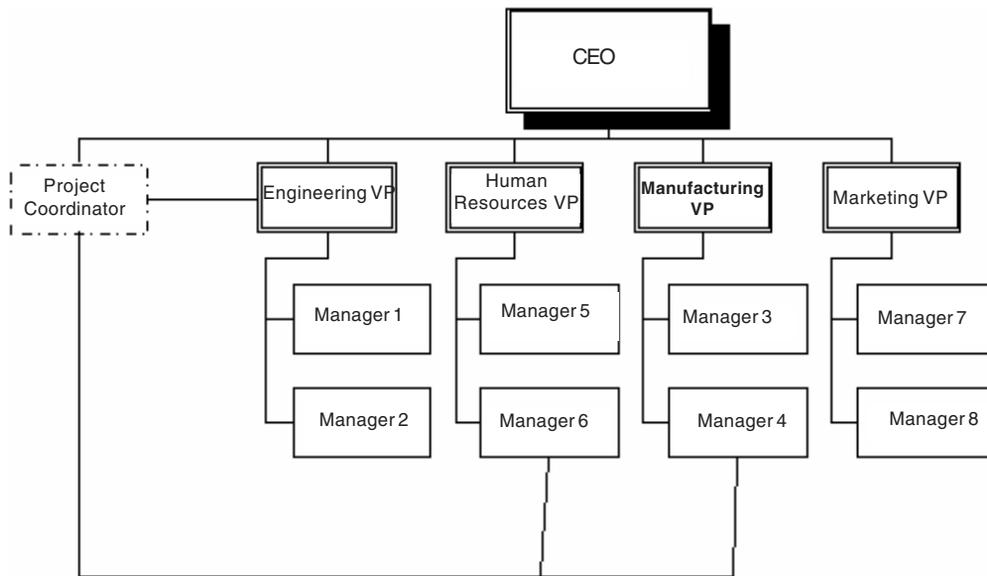


Figure 13.12. Project coordinator



organizations are more common in professional services firms such as architectural and engineering companies. Figure 13.13 illustrates this type of organization.

Matrix organizations represent a compromise between functional and projectized organizations. Figure 13.14 shows the matrix organization. There are three subtypes of matrix organizations:

- *Strong*: Balance of power rests with project manager
- *Weak*: Balance of power rests with functional manager (here a project expeditor or coordinator may be common)
- *Balanced*: Power is balanced between functional and project manager

The commonly used term *tight matrix* has nothing to do with a matrix organization per se; it simply means collocating the project team members.

The *advantages* of a matrix organization are:

- The project objectives are very clear
- The PM has better control over resources
- More support from functional organizations
- Better utilization of human resources

Figure 13.13. Projectized organization

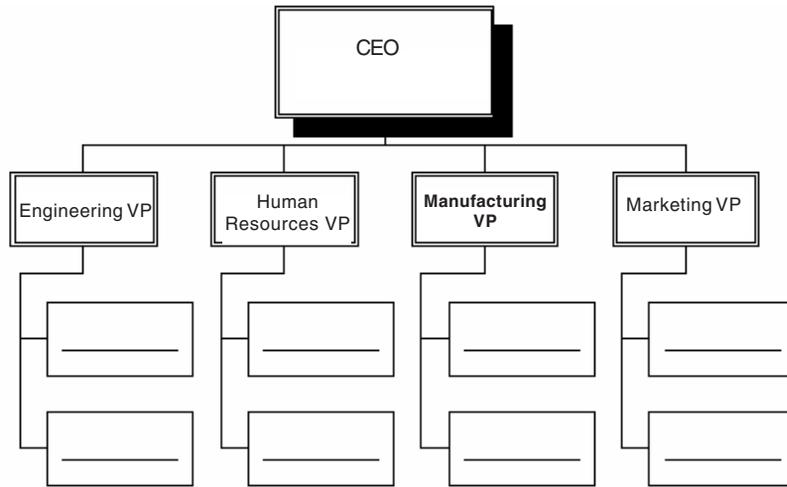
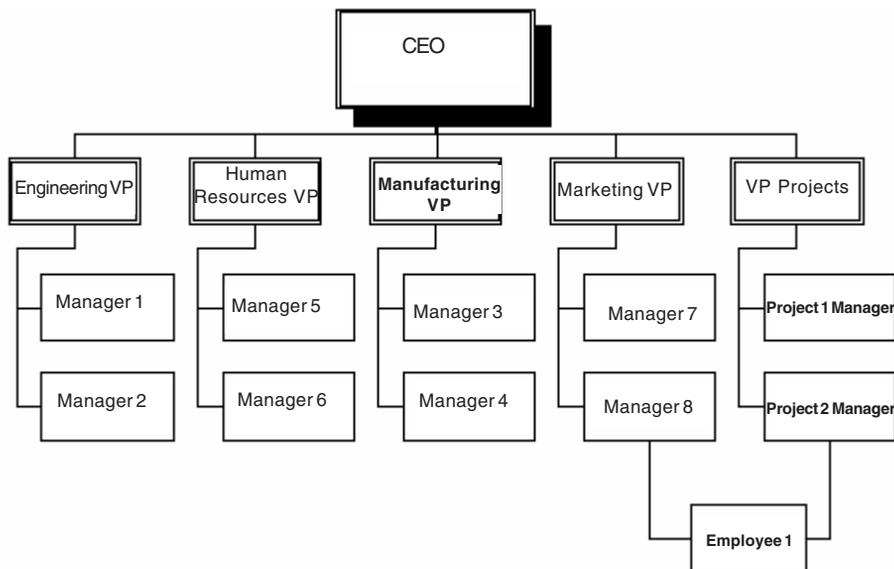


Figure 13.14. Matrix organization



- Better coordination of project tasks
- Better horizontal and vertical information flow than functional
- Employees maintain a home

The *disadvantages* of the matrix organization are:

- Less cost effective because of extra administrative personnel
- More than one boss for project teams
- More complex to administer
- Possibly more and bigger resource allocation problems
- More detailed policies and procedures needed
- Functional managers may have different priorities than project managers
- Higher potential for duplication of effort and resulting conflict

Human Resource Management

Human resource management is the term used by PMI for a group of processes primarily concerned with the interpersonal interaction of internal stakeholders. In the PMBOK the specific processes are (PMI, 2000):

- Organizational planning
- Staff acquisition
- Team development

These processes involve methods for managing the human aspects of a project. Poor human resource management is often the cause of project failures. Common human resource (HR) project problems include:

- Upper management meddling
- Lack of upper management support
- Project estimated before appointment of PM (usually manifested in unrealistic time/cost estimates)
- Project manager micro management
- Poor mix of project team members (too little or too much of certain skills, too little diversity, conflicting egos, immaturity, etc.)
- Lack of proper project staff motivation

A key part of proper HR management is to clarify and communicate the roles of different management components in an organization. These will vary somewhat depending on the organizational context. Generally, it is upper management's responsibility to approve a project business plan and charter, select and empower the PM, protect the project from adversarial stakeholders and other distractions, and approve the project schedule and cost plan (and significant changes thereto). It is the PM's responsibility to plan, estimate, and schedule a project. A PM should not be handed a project with the estimates and schedule already prepared; both the PM and project team need to buy-into these aspects of a project. It is the project team's responsibility to help plan (WBS, network diagram, estimates) the project and to carry out the work.

The PM has the main responsibility to assemble the project team and get the right mix of people for the project. The proper mix of people will include those who:

- Understand the project management process
- Understand the business justification for the project (business analysts)
- Understand the chosen software engineering methodology (software architects)
- Understand the details involved in constructing and delivering the product (system designers)
- Understand the customer and end users and their needs and wants (subject-matter experts)
- Understand the meaning of quality relative to this type of project and product
- Are specialists in regard to the technology that is to be embedded in the product or used on the project (technical experts)
- Can think outside the box and inject new ideas

If possible within the constraints of getting the correct skill mix from a technical perspective, it is usually helpful to get a mixture of people from differing perspectives, including:

- Left (analytical) brain versus right (intuitive) brain thinkers
- Adapters versus innovators
- Customer focused versus developer focused
- Insiders versus outsiders
- Shared (multiproject) versus dedicated (only this project)

"The riskier the project, the more diversity you need in the team. IT tends to attract similar types of people, and that's something you need to counteract." (Melymuka, 2004)

In an IT organization, the CIO and the HR department will typically work together to define and classify IT personnel into categories for the purposes of skill identification, experience levels, and salary ranges (for project cost estimation). This was discussed earlier in this book in regard to the development of a project's cost plan (budget). A PM needs to verify this classification and rate structure for use in his project. Typical IT categories may include:

- Project manager
- Subject matter expert
- Business analysis
- System architect
- Requirements analyst
- System analyst
- Programmer
- Technical writer
- Database analyst
- Webmaster
- Communications analyst
- Network administrator
- Testing specialist
- Security specialist
- Computer operator

Usually there are three or more expertise/experience levels within each of these categories. For each category and level there is usually a salary range. For project labor estimation purposes, the midpoint of these salary ranges is usually used. At one or more points in the project, specific employees are assigned to the project based upon availability and the necessary category type(s) for each WBS task. In assigning these specific human resources, the PM should consider a number of factors, including:

- Previous experience, including education and training (ability to do the job)
- Personal interests in and aptitude for the job
- Personal characteristics (e.g., do they work well in a team environment for this type of project)
- Availability within the time frames needed

To assist in this evaluation and selection process, the HR department or the IT department may maintain a skills-inventory database. In such a database, the skills for each employee are itemized along with the experience level (perhaps in months) for each skill either just for this company or for the employee's entire career. Some organizations

maintain such a skill inventory database for not only employees but also for job applicants and contractors as well. An assessment matrix can be used where available personnel are mapped to needed job categories; this is illustrated in Figure 13.15, which shows months of experience in each category. This also helps identify any needed staff development, and it is important to define such training needs early so that they can be included in the schedule and cost plan.

A PM should assign all tasks and all team members without ambiguity or redundancy and in such a manner that follows the project WBS and detailed scope definition. One must be careful of the Halo effect (e.g., a great programmer will make a great system architect) when assigning staff. A formal HR plan can be documented to show the people that may be or will be a part of the project team. A sample simple HR plan form is shown in Figure 13.16.

There are several other types of forms and charts that are often used in this process:

- *Responsibility Assignment Matrix*: Relates tasks to people
- *Resource Histogram*: Shows resource utilization in time
- *Resource Gantt Chart*: Shows when staff is assigned

A responsibility assignment matrix is illustrated in Figure 13.17. The cells may show one or more types of information regarding the assignments:

- Primary versus Secondary (P = primary, S = secondary)
- % of time allocated to this task
- Role (P = participant, I = input required, R = review required, S = sign-off required, A = accountable)

Figure 13.18 illustrates a resource histogram which shows the hours scheduled for either a single resource or a single resource type by time period throughout the project.

Figure 13.19 illustrates a resource Gantt chart that shows the scheduled time periods for resources on the project. A resource Gantt chart can also be made for all resources on all projects; such a chart is used for resource allocation across projects and also resource leveling.

Figure 13.15. Skill assessment

Skill	Ed	Jane	Mary	Tom	Bill	Larry	Sue	Marge
Analyst	3		42			15		6
Sft. Designer	3		12			30	12	
Programmer				12		12		
Tech Writer		12			20			
Database						12	24	
UI Designer					12			6
Sys. Architect	3					6		
Tester		12			24			

Figure 13.16. Project HR plan

<u>Project HR Plan</u>						
Project Code: _____			Date: _____			
Project Name: _____						
Benefiting Organization: _____						
Performing Organization: _____						
Project Manager: _____						
HR Manager: _____						
Human Resources:						
Person	Code	Role/Resp	Burdened Rate	% Alloc to Proj	Training	
1.	_____	_____	_____	_____	_____	
2.	_____	_____	_____	_____	_____	
3.	_____	_____	_____	_____	_____	
4.	_____	_____	_____	_____	_____	
5.	_____	_____	_____	_____	_____	
N.	_____	_____	_____	_____	_____	
Recruiting Needs: _____						
Team Building: _____						
Consulting: _____						
Contracting: _____						
Notes: _____						
Approvals						
Benefiting Organization			Approvals	Performing Organization		
By: _____				By: _____		
Date: _____				Date: _____		

Figure 13.17. Resource assignment matrix

TASK	TEAM MEMBER			
	Jane	Tom	Bill	Mary
Task 1	<i>P</i>		<i>S</i>	
Task 2		<i>P</i>		
Task 3	<i>S</i>			<i>P</i>
Task 4			<i>P</i>	<i>S</i>

Figure 13.18. Resource utilization

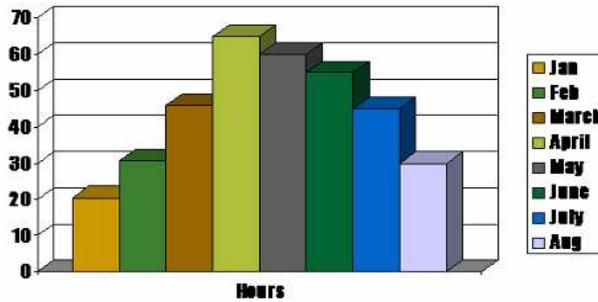


Figure 13.19. Resource Gantt chart

ID	Person	Start	End	Capacity	Jan 2001		Feb 2001		Mar 2001		Apr 2001		May 2001		Jun 2001		Jul 2001											
					su	mo	tu	wed	th	fr	sa	su	mo	tu	wed	th	fr	sa	su	mo	tu	wed	th	fr	sa	su		
1	Bill	1/1/01	6/28/01	25k	[Resource utilization bars]																							
2	Mary	2/1/01	7/31/01	21.5k	[Resource utilization bars]																							
3	Bill	1/1/01	2/28/01	8.5k	[Resource utilization bars]																							
4	John	5/1/01	10/28/01	25k	[Resource utilization bars]																							
5	Mary	4/2/01	6/15/01	11k	[Resource utilization bars]																							

The Software Engineering Institute (SEI; www.sei.cmu.edu/cmm-p/) also has a “people” capability maturity model. Like their other maturity models, five levels of maturity are defined, and each of these levels has key processes defined:

1. *Initial.*
2. *Repeatable.* The key process areas at Level 2 focus on instilling basic discipline into workforce activities. They are:
 - Work environment
 - Communication
 - Staffing
 - Performance management
 - Training
 - Compensation
3. *Defined.* The key process areas at Level 3 address issues surrounding the identification of the organization’s primary competencies and aligning its people management activities with them. They are:
 - Knowledge and skills analysis
 - Workforce planning

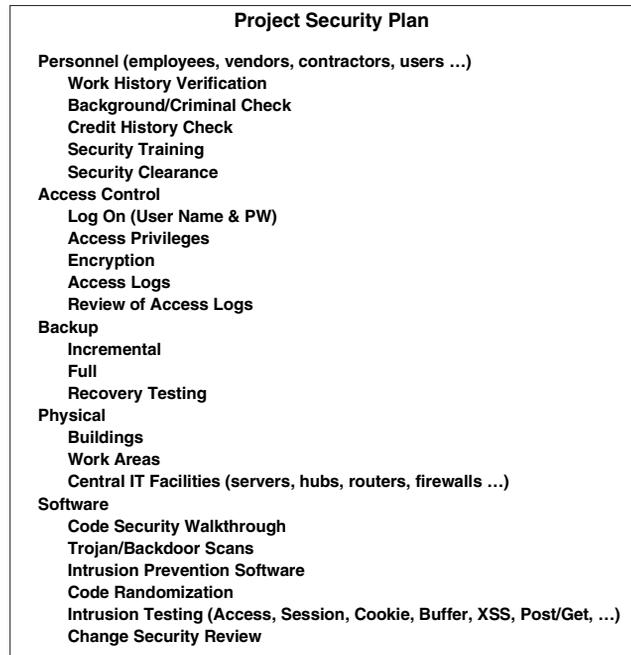
- Competency development
 - Career development
 - Competency-based practices
 - Participatory culture
4. *Managed.* The key process areas at Level 4 focus on quantitatively managing organizational growth in people management capabilities and in establishing competency-based teams. They are:
- Mentoring
 - Team building
 - Team-based practices
 - Organizational competency management
 - Organizational performance alignment
5. *Optimizing.* The key process areas at Level 5 cover the issues that address continuous improvement of methods for developing competency, at both the organizational and the individual level. They are:
- Personal competency development
 - Coaching
 - Continuous workforce innovation

As discussed earlier in this book, security aspects should not be ignored in HR planning, and procedures such as background checks for all personnel (employees, contractors, consultants, etc.) involved with a project are becoming more appropriate. It is no longer sufficient simply to secure the perimeter physically and logically, but active security procedures need to be implemented for those objects already inside of the perimeter. Figure 13.20 shows the types of issues that should be addressed in a simple project security plan.

Managing the Project Team

In general, a manager *may* play many roles. There are interpersonal roles such as figurehead, leader, liaison, coach, motivator; informational roles including monitor, disseminator, spokesman, reporter; and decisional roles such as conflict resolver, entrepreneur, distance handler, resource allocator, negotiator, and facilitator. A project manager, however, *must* play most of these roles, as project management is a more comprehensive and perhaps more difficult type of management position. Like a line manager, a project manager must deal with direct reports and must motivate these individuals to do their best for the project, but like an upper manager, many and diverse stakeholders (as defined earlier) are involved, and each of these stakeholders have different interest in the success or failure of the project. In addition most projects will

Figure 13.20. Project security plan



bring about changes, which always introduces apprehensive and uncertainty into the job situation.

The key responsibilities (i.e., things that a project manager must possess or do) are:

- Be honest and ethical
- Motivate staff and team
- Understand deliverables and quality in regard to the deliverables
- Be sensitive to organizational values and politics
- Assign meaningful tasks for each employee
- Provide something “to look forward to” for each employee
- Shared goals (employee/supervisor & employee/organization)
- Delegate; generally, give direction, not directions (depends somewhat on performance, capabilities, maturity)
- Be a facilitator
- Be an example
- Be accessible and visible, then listen

- Look after the welfare of employees
- Be fair but firm
- Provide equal treatment for all employees

Conversely, an employee's responsibilities to his or her manager are:

- Honesty about your capabilities, desires, and opinions; about work status; about asking for help when you need it
- Cooperation/loyalty as team member, commitment to coworkers
- 100 % effort, commitment to work, team, and organization
- Keep superiors informed: *Remember, bosses hate surprises!*

A project manager must foster and encourage the above traits in his or her employees. Managers and supervisors are charged with activities like planning, budgeting, organizing, staff assignment, and control (taking corrective action). Leaders also assume activities such as projecting a vision, setting direction, inspiring teamwork, aligning employees and business units, motivating, and supporting. Project managers should be both.

Projects bring about change, thus it is important that a PM create and communicate a clear and important vision to his or her team. Thorns and Kerwin (2004) define *vision* as follows:

A vision is a cognitive image of an organization or project team that is positive enough to followers to provide motivation and elaborative enough to provide direction for planning and goal setting.

A vision and the goals derived from it should be challenging yet obtainable, and somewhat idealistic. PMs should show optimism about the project goals and have a positive attitude. Projecting the vision to the team and organization in a very positive manner is somewhat akin to being a visionary; being such a visionary is a key trait of an effective leader.

There are many theories of leadership; and leadership and management needs and styles vary somewhat by industry and discipline. For IT, leadership theories that deal with professional types of organizations and people are more applicable. The Situational Leadership Model (Hersey, 1977) is quite applicable for IT projects. It deals with the type of management style that may be most appropriate for different types of individuals depending upon their experience/capabilities versus their self motivation/initiative.

In this theory, management style is represented in two dimensions. The first dimension is directive (management) or task-oriented behavior, and the second dimension is supportive (leadership) or relationship-oriented behavior:

- *Directive (management)*: Structure, Control, Supervision
- *Supportive (leadership)*: Listen, Praise, Empower, Facilitate

This is illustrated in Figure 13.21. There are four quadrants representing four types of management style:

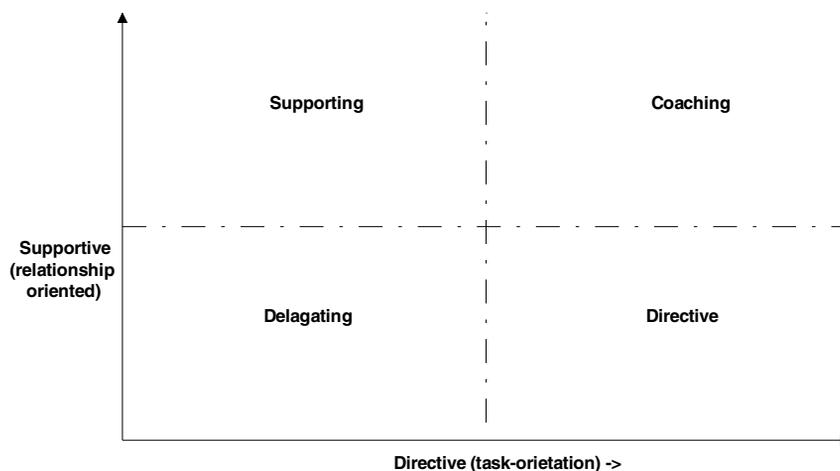
- *Directing*: High directive and low supportive
- *Coaching*: High directive and high supportive
- *Supporting*: High supportive and low directive
- *Delegating*: Low supportive and low directive

In addition to the four types of management styles there are five levels of employees:

- L0 - Low competence and low initiative
- L1 - Low competence and high initiative
- L2 - Some competence and low initiative
- L3 - High competence and some initiative
- L4 - High competence and high initiative

Competence in this instance means task-relevant knowledge, skills, and experience. *Initiative* means self-motivation and confidence. There is a natural evolutionary path for most professionals:

Figure 13.21. Management styles



L1->L2

New employee is L1 (full of enthusiasm but with little job-specific knowledge). After a while, the employee realizes that there is still a lot to learn therefore, his or her competence goes up while initiative goes down

L2->L3

Employee knows most things needed in job, and some initiative is restored

L3->L4

Employee fully knows job and thus has high initiative

For best results, managers needs to match their management style to the employee's level of development:

- L0 -> Reassign, transfer, or terminate
- L1 -> Direct
- L2 -> Coach
- L3-> Support
- L4 -> Delegate

Thus, for employees with low competence and low initiative, a project manager should avoid having any such people on the team. For employees with low competence and high initiative, a project manager should use a directing style. For employees with some competence and low initiative, a project manager should use a coaching style. For employees with high competence and some initiative, a project manager should use the supporting style. For employees with high competence and high initiative, a project manager should use the delegating style (stay out of their way).

The ability to delegation is often a problem for managers, particularly managers in professional occupations (like IT) and particularly for managers who have come up through the technical ranks. Most managers who do not delegate well are really afraid of losing control. These managers need to ask themselves, "What have I got to lose by delegation?" and then find ways to mitigate such potential losses. Such mitigation techniques include:

- Giving clear direction
- Monitor progress in a quantitative manner
- Building milestones into schedules
- Providing explanations and assistance if and when needed
- Monitoring team attitudes such as via quality stage gates

In contrast, they can ask themselves: “What have I got to gain?” and the answer to this question is typically a list of valuable items. Specific delegation techniques include:

- Delegate outcomes with the tasks
- Do not give team members ill-defined or unsolvable tasks
- Delegate only to people you trust (or should trust)
- Clearly point out to team members the consequences of this assignment to the organization and to them
- Delegate small tasks at first, then add more tasks as the first are handled well
- Have a reporting system so that you catch little problems before they become big problems (i.e., quality and management stage gates with earned value systems which are discussed later in this book)
- Ask the team member to develop the estimates and milestones (even if you may know what they should be, to obtain buy-in from that team member)
- Do not delegate tasks that should be automated
- Do not delegate tasks that only you can do

PMs sometimes have some degree of difficulty in getting people to perform and cooperate, particularly in a matrix-type setup. Organizational power types were discussed earlier, including position (and its subtypes: reward, penalty, referent), political, resource, and expert. In a functional or matrix organization, the PMs must rely on powers other than formal position power. The most effective forms of power for a PM are typically expert and reward; less effective is penalty and referent. Formal, reward, and penalty are powers derived mainly from position; expert power is earned. *True leadership is not based on position, but being able to motivate people in other ways. If you have to use formal power to tell your staff you are the leader, you're not!*

Motivation is an internal drive that initiates and sustains activity toward specific goals. An effective manager and leader must know how to motivate others, especially PMs with little formal power. An employee, even if fully capable, will not reach full (or perhaps even adequate) performance without motivation. Motivation may be derived from external sources (extrinsic) or from internal sources (intrinsic). Internal motivation is derived from the satisfaction of either doing or completing a task/activity. External motivation comes from a reward system based upon successful completion of a task/activity. Our hobbies and leisure activities generally involve internal motivation. Our employment activities generally involve external motivation, but for some there may also be much internal motivation (you really like your job).

Henry Gantt (1861-1919), who developed the Gantt chart, focused on motivational schemes, emphasizing rewards for good work (rather than penalties for poor work). He developed a number of such systems including incentive pay systems for groups and bonus systems for individuals. In management science, there are a number of motivation theories; the most applicable for professional work as IT are:

- Maslow's theory (hierarchy of needs)
- McGregor's theory (X and Y types)
- Herzberg's theory (hygiene and motivating agents)
- Expectancy theory
- Equity theory

In Maslow's theory, people are motivated based upon their level in a hierarchy of needs (from lowest to highest):

- *Physiological*: Air, water, food, shelter, clothing
- *Safety*: Security and freedom from harm
- *Social*: Love, approval, friends, association
- *Esteem*: Accomplishment, respect, attention, appreciation
- *Self-Actualization*: Self fulfillment, growth, learning

If one is satisfied with one level, then they will be motivated to get to the next level; and until satisfied with one level, they will not care about the next level

McGregor's theory state that all workers fall into one of two categories:

- *Theory X*: These workers need to be closely supervised; they are incapable, avoid responsibility, and avoid working whenever possible ["No" (X) people]
- *Theory Y*: These people are willing to work without supervision and want to achieve ["Yes" people]

In my experience for IT projects:

- One third of people fall into category X
- One third of people fall into category Y
- One third of people's motivation can be significantly influenced by their management

Herzberg's theory defines poor hygiene factors that reduce motivation and good hygiene factors that foster motivation. To maintain motivation, poor hygiene factors need to meet adequate levels, but improving them further will not necessarily improve motivation. Adequate levels may be subjective, but are usually industry standard levels. These poor hygiene factors are:

- Working conditions
- Salary
- Personal life
- Relationships at work
- Security
- Status

The good hygiene factors or motivating agents involve the work itself for professional-type employees as:

- Responsibility
- Self-actualization
- Professional growth
- Recognition

Under expectancy theory, employees who believe their work efforts will lead to good performance and who expect to be rewarded for their accomplishments, remain productive as rewards meet their expectations. With equity theory, employees must believe that they are being treated in a similar manner to other employees; otherwise they will lose their motivation.

To adequately motivate IT project team members, I believe that a combination of methods that consider each of the major theories is best:

- Adequate (industry standard) working conditions, salary, benefits, security, and so forth
- Equity between employees
- Interesting and challenging assignments
- Delegation of responsibility
- Rewards (financial, position, office location, other perks) based upon performance
- Public recognition and praise (praise in public, criticize in private)
- Staff development (i.e., training)
- Other “team-building” methods

Team building is included in the list, and one of the responsibilities of the PM is to encourage and facilitate the involvement and contribution of all the stakeholders in the project and for each to feel a part of the team. Team building requires a deliberate and continuous effort on the part of the PM. There are many management theories concerning team building; a prominent one is the Tuckman model, which describes the phases of team development as Forming, Storming, Norming, and Performing (Tuckman, 1965). Tuckman’s

model explains that as the team forms and becomes more adapt at the tasks, relationships develop and solidify. The team leader also changes leadership style beginning with a directing style, moving through coaching, then supporting, and finally delegating, as was described earlier in this chapter. Whenever diverse people are brought together in a team, some time is necessary for them to evolve from a group of individuals into a team.

Figure 13.22 illustrates the differences between a group and a real team. Team-building activities facilitate and expedite team “forming and storming,” and these activities should start very early and proceed throughout the entire project. Specific opportunities for team building include:

- Kick-off meeting
- Requirements review
- WBS specification
- Overall design review
- Prototype review
- Communication of status via stage gate meetings
- Staff development (project team training and end user training)
- Testing review

Tight organizations involving some colocation also foster team building such as a war room. This war room need not be physical, but may be a virtual meeting place via synchronous electronic communication.

Some conflict is unavoidable in any effort among many people (such as a project) due to the number and differing agendas and priorities of all the stakeholders. The limited authority of the PM and his need to compete for scarce resources (budgets and people) in the organization also leads to conflict. The classical view was that conflict is bad and that it happens in a dysfunctional group without good leadership. But the modern view is that conflict is inherent in teams and organizations and that conflict can be helpful to explore more solution alternatives. Another older view was that conflict could be resolved by separating the conflicting parties or by going up the management chain. But separation or upper management involvement is at best only a temporary solution. The

Figure 13.22. Groups vs. teams

Characteristics of a “Group”	Characteristics of a “Team”
Individual performers	Common goals
Responsibilities may drift	Task based structure
Mostly “organizational” meetings	Mostly progress or problem resolution meetings
Individual egos	Collective ego
Members have other more important duties	This is a major activity for each
Relative isolation	Much connection (either physically or electronic)

modern view is that conflict is best resolved through identification of the root causes and by problem solving discussions of the parties involved.

The main sources of conflict on a project in order of frequency are (PMI, 2000) as follows:

- Schedules
- Priorities
- Resources
- Technical opinions
- Administrative procedures
- Cost
- Personalities

Many people think that personality differences would be a major conflict source, and in some situations this may be still be true, but professional employees tend to put aside personality differences (or hide them) so that they can effectively negotiate their interests in terms of schedules, priorities, resources, and so forth. There are some management techniques that the PM can employ to avoid or at least minimize conflicts:

- Keep the team and other stakeholders informed:
 - Project goals and objectives
 - Schedule and cost
 - Assignments (task and times)
 - Changes (schedule, scope, assignments, etc.)
 - Other key project decisions
 - Assigning tasks fairly and clearly (who, what, when)
 - Design tasks to be relevant, interesting, doable yet challenging
 - Monitoring team attitudes such as via quality stage gates

The main techniques for formal conflict resolution are:

- *Compromising*: Identifying an acceptable solution that gives all the parties some degree of satisfaction
- *Withdrawal*: Postponing a solution decision until a later point in the project
- *Smoothing*: Focusing on the things the parties agree on and avoiding dealing with the other issues for the present
- *Forcing*: Mandating one proposed solution over the other
- *Structured Problem Solving*: Identifying root causes then solving the real problem

Withdrawal and smoothing are effective when a solution to the problem is not needed until later in the project—perhaps by then more information may be available, the issue may be less important, or the conflicting parties may have resolved it amongst themselves—but when a decision is needed immediately, many PMs and/or line managers result to forcing. However, forcing is not nearly as effective as structured problem solving in the long run. Smoothing is also more effective in the long term when structured problem solving cannot be used due to time, distance, or other constraints. In regard to conflict resolution and other decision making, there may be additional constraints imposed upon the PM in some organizations due to organizational structure, union agreements, quotas and regulations, and industry or government codes and standards.

Chapter Summary

In this chapter, the human aspects of project management were covered, including stakeholder management, project communications, and human-resource management. These plans are all highly interrelated, and also related to the project risk and security plans (which was also discussed in this chapter). According to Baker and Baker's (1998) 12 golden rules of project management:

1. "Thou shalt gain consensus on project outcomes.
2. Thou shalt build the best team you can.
3. Thou shalt develop a comprehensive, viable plan and keep it up-to-date.
4. Thou shalt determine how much stuff you really need to get things done.
5. Thou shalt develop a realistic schedule.
6. Thou shalt not try to do more than can be done.
7. Thou shalt remember that people count.
8. Thou shalt gain the formal and ongoing support of management and stakeholders.
9. Thou shalt be willing to change.
10. Thou shalt keep people informed of what you're doing.
11. Thou shalt be willing to try new things.
12. Thou shalt be a leader as well as a manager."

References

Baker, S., & Baker, K. (1998). *The complete idiot's guide to project management*. Indianapolis, IN: Alpha Books.

- Cleland, D. (1998). Stakeholder management. In J. Pinto (Ed.), *Project management handbook*. New York: Jossey-Bass.
- Hersey, P., & Blanchard, K. (1977). *The management of organizational behavior*. Upper Saddle River, NJ: Prentice Hall.
- Melymuka, K. (2004, April 12). How to pick a project team. *Computerworld*.
- PMI. (2000). *The project management body of knowledge (PMBOK)*. Newton Square, PA. ISBN 1-880410-22-2.
- Thorns, P., & Kerwin, J. (2004). Leadership of project teams. In P. Morris & J. Pinto (Eds.), *The Wiley guide to managing projects*. New York: Wiley.
- Tuckman, B. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63, 384-399.
- Winch, G. (2004). Managing project stakeholders. In P. Morris & J. Pinto (Eds.), *The Wiley guide to managing projects*. New York: Wiley.